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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/709,524  | 05/12/2004  | Yin-Chang Chen       | AMIP0028USA         | 3523             |
| 27765   | 7590        | 12/02/2004           | EXAMINER            |                  |
| NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)<br>P.O. BOX 506<br>MERRIFIELD, VA 22116 |             |                      | LAXTON, GARY L      |                  |
|   |             | ART UNIT             |                     | PAPER NUMBER     |
|   |             | 2838                 |                     |                  |

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                   |                         |
|------------------------------|-----------------------------------|-------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b>            | <b>Applicant(s)</b>     |
|                              | 10/709,524                        | CHEN, YIN-CHANG         |
|                              | <b>Examiner</b><br>Gary L. Laxton | <b>Art Unit</b><br>2838 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) \_\_\_\_\_ is/are rejected.  
 7) Claim(s) 1-12 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 12 May 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

## DETAILED ACTION

### ***Specification***

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

2. Claims 1-12 are objected to because of the following informalities:

Claim 1 recites the limitation "the output node" in line 11. There is insufficient antecedent basis for this limitation in the claim. An output node was previously recited. It is unclear if these are the same or different. Applicant should use first output node and second output node in order to distinguish.

Claim 1 recites the limitation "a reference voltage" in line 22. There is insufficient antecedent basis for this limitation in the claim. A reference voltage was previously recited in line 15. It is unclear if these are the same or different. Applicant should use first reference source and second reference source in order to distinguish.

Claim 1 recites the limitation "a voltage" in line 39. There is insufficient antecedent basis for this limitation in the claim. A voltage source was previously recited in line 10. It is unclear if these are the same or different. Applicant should use first voltage source and second voltage source in order to distinguish.

Claim 6 recites the limitation "the source" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "a first voltage source" in line 7. There is insufficient antecedent basis for this limitation in the claim. Several voltage sources were previously recited. Applicant's labeling can introduce confusion. Applicant should be consistent with claim language so as not to confuse. Applicant should use first, second and third etc voltage sources in order to distinguish.

Appropriate correction is required.

### ***Allowable Subject Matter***

3. Claims 1-6 would be allowable if rewritten or amended to overcome the objection(s) forth in this Office action.

4. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or suggest, inter alia, a semiconductor device with a negative voltage regulator comprising a negative voltage regulator comprising: a driver wherein a first node of the driver is connected with a voltage source and an output node of the driver is connected with an output node of the negative voltage regulator; a first operational amplifier connected with a feedback voltage and a reference voltage at the inputs and the output connected to the first transistor, the first operational amplifier is for controlling a current of the first transistor; a second operational amplifier connected with

a reference voltage and the feedback voltage at the inputs and connected to a second transistor at the output, the second operational amplifier is for controlling a current of the second transistor; a current source circuit providing the driver with a current, the current source circuit comprising two triple well n-type metal-oxide semiconductor transistors, wherein the drains of the two NMOS transistors are connected with a drain of the first transistor and a drain of the second transistor and sources of the NMOS transistors are connected with the negative input voltage; and a voltage potential divider generating the feedback voltage, the feedback is connected with the first input of the first operational amplifier and the second input of the second operational amplifier for regulating the negative output voltage.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,600,692 Tanzawa discloses a semiconductor device with a voltage regulator.
  
6. This application is in condition for allowance except for the following formal matters noted above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



11/29/04

Gary L. Laxton  
Patent Examiner  
Art Unit 2838